



# MIS IN ELEMENTARY EDUCATION: A QUALITATIVE CHECK STUDY OF U-DISE IN ANDHRA PRADESH

Dr. T Vijaya Kumar<sup>1</sup> | K.Rajeshwar<sup>2</sup> | Dr. N. Deepa<sup>3</sup>

<sup>1</sup> Associate Professor, Centre for Human Resource Development, School of Development Studies and Social Justice, National Institute of Rural Development and Panchayati Raj (NIRD&PR), Hyderabad.

<sup>2</sup> CPA and Team Leader –IT, Centre for Geo-Informatics Application in Rural Development, NIRD&PR.

<sup>3</sup> UGC Post-Doctoral Fellow, CESD, NIRD&PR.

## ABSTRACT

Sarva Shiksha Abhiyan (SSA) is a major flagship programme in India to achieve Universalization of Elementary Education in the country through decentralized context specific planning and implementation strategies on a mission mode. The Unified District Education Information System for Education (U-DISE) provides professional support to collect the information from all schools and maintain the database at the district for effective implementation of Educational Programmes and interventions. It is a computerized management information system to collect the data at the school point as a unit and district as unit of data dissemination. Further, the collected data is transmitted to National University of Educational Planning, New Delhi to generate various statistical reports on elementary education. The present paper is developed on the 5% quality check study taken up in Chittoor and East Godavari districts of Andhra Pradesh state by National Institute of Rural Development and Panchayati Raj. The aim of the study is to verify the actual data submitted and also to refine the collected data for maintaining internal consistency at the district and state level to facilitate the decision making process in educational, management and administration and further to suggest the measures for improvement of database on information pertaining to elementary education in the state of Andhra Pradesh.

**KEYWORDS:** Elementary Education, Unified District Information System for Education, Sarva Shiksha Abhiyan and Management Information System (MIS)

## Introduction:

Sarva Shiksha Abhiyan (SSA) is a comprehensive and integrated flagship programme of Government of India to attain Universal Elementary Education (UEE), covering the entire country in a mission mode. SSA has been launched in 2001-2002 in partnership with the State Governments and Local Self-Governments. The programme aims to provide useful and relevant, elementary education to all children in the age group of 6 to 14 by 2010. It is an initiative to universalize and improve the quality of education through decentralized and context specific planning and a process based, time bound implementation strategy. A number of programmes / schemes were launched during the last four decades for universalization of elementary education. Some of these efforts have been in the field of primary education and a few also covering upper primary sector. Due to these interventions, initiated by the Government of India and the respective State Governments, there has been a considerable progress in providing access, improving retention and the quality improvement in primary education sector.

SSA adopts, 'the bottom-up' process of planning, wherein the felt needs of the served communities and educational needs of learners are well taken care of and the plan fits into the broad framework of SSA. In view of the fact that the desired improvement and sustenance of the improved efficiency level cannot be achieved without the active involvement of the community in the schooling system, SSA has emphasized the involvement of local people & stakeholders in planning. This also ensures reflection of local specificity, which is essential for achieving the goals of the programme.

## Education System in Andhra Pradesh: A Glimpse

The value of education has been well-appreciated in Andhra Pradesh and the state is making progress every day in this regard. Andhra Pradesh's literacy rate is lower than the national average as per census 2011. Male literacy rate has reached almost 74.54% and female literacy rate has crossed 59.11%. Gender gap in literacy rate is also reducing. The number of educational institutions, teachers and enrolment figures has increased between 2001 and 2012.

Sarva Shiksha Abhiyan (SSA) has strengthened basic infrastructural facilities in most schools. Pupil Teacher Ratio is also less than 1: 30 in primary and upper primary schools of Andhra Pradesh. However, improving learning achievement level is a greater challenge for the state.

## Literacy Rate:-

**Table No. 1 Status of Literacy in Andhra Pradesh**

S.No	Overall Literacy Rate		Male Literacy Rate	Female Literacy Rate
1	Andhra Pradesh	66.8%	74.54%	59.11 %
2	All Over India	74.04%	82.14%	65.46%

## Unified District Information System of Education:

NUEPA designed software for implementation at the district level and provided the necessary technical and professional support to collect the information and maintain the database at the district level in programme implementation under DPEP. In 1995, a first version of the software was launched and called District Information System for Education (DISE). DISE covers elementary stage covering 8 years of school education. Since, 2012-13, U-DISE has been renamed as U-DISE (Unified District Information System for Education). It is a computerized management information system with school as the unit of data collection and district as the unit of data dissemination. It has been developed jointly by the NUEPA, Dept. of School Education and Literacy, Ministry of Human Resource Development, GoI and UNICEF 30th September, each year, is the reference date by this all data for that year is to be collected and maintained( Elementary Education in India: Where do we stand ?,2011-112, NUEPA, New Delhi).

## Unified District Information System for Education and Sample Check

**Unified District Information System for Education** made a provision for strengthening the Educational Management. A number of Government and Quasi Government Institutions were involved in collection of information on important educational variables from the schools concerned to provide inputs for formulation of district elementary education plans under Sarva Shiksha Abhiyan and also for five year plans. Further this intervention will also be useful for decentralized framework programme implementation.

The present research paper is based on data collected through five percent sample of the actual U-DISE data in Andhra Pradesh. The paper is aimed at verification of data collected through U-DISE and to observe the similarities as well as deviations.

## Objectives

The main objectives of the study are:

1. Evaluate the quality check of the U-DISE data 2014.
2. Measure the precision levels as well as deviation of U-DISE data
3. Suggest measures for strengthening the database in SSA.

## Methodology:

In view of the above objectives and nature of the study, the researcher selected the stratified random methods for sampling and adopted descriptive survey method.

## Study for collection of data

The area chosen for the present study is Andhra Pradesh which consists of thirteen districts. Out of this two districts were selected as sample. In each district, the schools were randomly selected from all the regions representing urban, rural, SC and tribal areas. Thus, a total of 399 schools were covered in the present

study. The following Table-2 shows the district wise distribution of schools.

**Table 2 District wise distribution of schools**

S.No.	Name of the District	Number of Schools
1	Chittoor	217
2	East Godavari	182
	Total	399

As shown in the above table, 217 schools from Chittoor and 182 from East Godavari districts were selected as the sample are the present study.

### Sampling

The universe of the study is all the schools covered under SSA programme in Andhra Pradesh. As the U-DISE data consists of information on all the schools covered under SSA in Andhra Pradesh, five percent of the schools appropriately representing schools across the state were selected for deriving sample for the study. While confining to the five percent sampling, care has been taken to emphasize on type of schools as well as their management by ensuring the representation of both rural and urban areas, and different types of management of schools namely government, Private, Aided, Recognized, etc. Due representation was also given to the schools located in the SC/ST area.

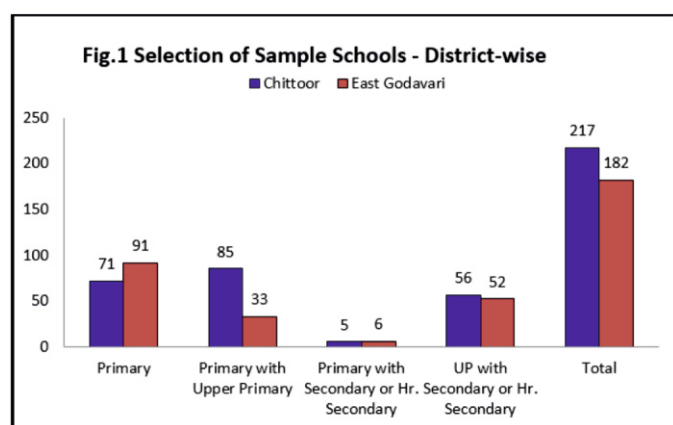
The sample selected for the present study was 399 schools and the below table furnishes the information:

**Table: 3. Distribution of Sample by School Category and District**

Sl. No.	School Category	District		Total
		Chittoor	East Godavari	
1	Primary	71	91	162
2	Primary with Upper Primary	85	33	118
3	Primary with Secondary or Hr. Secondary	5	6	11
4	UP with Secondary or Hr. Secondary	56	52	108
	Total	217	182	399
	%	(54.4)	(45.6)	(100.0)

The above table gives a clear view of district-wise and school category wise distribution of the sample. Out of total sample (399 schools) 162 (40.6%) schools were selected from Primary schools, 118 (29.5%) schools from Primary with Upper Primary and 11 (2.7%) from primary with secondary or higher secondary sections, 108 (27%) from Upper primary with secondary or Higher secondary sections.

It is evident from the above table that majority of schools are from Primary i.e. 162 and within this



It is clear from Fig. 1 that the majority of Primary schools are in East Godavari district (91 schools) followed primary with upper primary (33 schools), primary with secondary (06schools). It can be inferred from the Fig. that Chittoor has less number of primary schools (71) and more number of Primary with upper primary schools (85) when compared to East Godavari district in the Sample.

### Instruments for Data Collection

A prescribed 'schedule' designed by National University of Educational Planning and Administration (NUEPA), New Delhi consisting of information on various aspects of school information was administered for the purpose of the study. It covers the aspects like school enrolment, dropouts, stagnation, physical and teaching facilities and so on.

### Collection of Data

The data collection was taken up by the study team by making physical visit to all the schools for preliminary interaction with teaching staff and appraising themselves with the physical and academic conditions prevailing thereof. Since the data collection is to be covered in a span of less time and the task is of gigantic proportion, required number of research investigators were identified and trained thoroughly in terms of appropriate data collection methods. Specific care has been taken to identify the research investigators keeping in view the requirement of exposure to school education. Hence, Post Graduates having B.Ed and M.Ed qualification were specifically drafted as research investigators for the purpose of the study. They were in turn given a two-day orientation on data collection and then placed for actual data collection. The school management concerned was informed in advance to keep the records ready for secondary data collection as well. On the day of visit to the schools, the structured schedule was administered for primary data collection under the supervision of research team.

### Reference period

The U-DISE data pertains to the year 2014 with 30th September as reference date. The post enumeration survey was also of the same period.

### Data Analysis and Presentation

Collected data, after scrutiny of both the sets of formats, already filled up U-DISE formats and special DCF, were subjected to comparison by using simple deviation method. The school-wise and category-wise data was analyzed by using the simple deviation analysis tools in reference to all the comparable items of the survey. The overall deviation of data has been calculated as per following formula.

$$\frac{(d1+d2+d3+d4+d5.....dx) \times 100}{a+b+c+d+.....+x}$$

Where  $d1, d2, d3...$  stands for deviation of items of U-DISE data from Post Enumeration Survey data ignoring + or - signs and  $a, b, c$ , denote items of Post Enumeration Survey data.

Based on the above cited formula, information pertaining to 399 schools, where commonality of data exists, is presented variable-wise providing actual data obtained through PES and U-DISE and deviation observed thereof.

The study was confined to 399 schools drawn from two districts across Andhra Pradesh. However, as the U-DISE data did not have the component of private and un-aided schools information, thus data of 399 common schools were used for comparative analysis. The schools selected for the study consists of various category of school education and also different managements. The data were collected for the study through a structured schedule prescribed for the purpose. As the study findings were devoted to establish the comparison with U-DISE data already collected, a specific prescribed formula was adopted for comparable items of data. The study has certain limitations due to differential formats prescribed for U-DISE and PES survey. However, as most of the items were comparable, a genuine attempt has been made to arrive at confirmation and deviation of survey results on the basis of statistical applications.

### Limitations of the Study:

Keeping in view of all the parameters, the study has carefully drawn the conclusions with following limitations:

- Difference in Formats for post enumeration survey and U-DISE 2014 Data.
- Coverage of all types of school Managements
- Unfilled schools from in prescribed formats of U-DISE 2014 Data.

### Post Enumeration Survey Results and Analysis:

The Post Enumeration Survey (PES) is a method for evaluating the results of a census. The PES has the following specific objectives:

1. To measure under-coverage and over- coverage of persons or units.
2. To measure levels of agreement for responses to questions on selected characteristics, such as sex, age, marital status and other parameters of the school.
3. Offers the opportunity to learn from procedural and conceptual limitations in the census which need improvement in future assures and large scale surveys.

The inadequacy, incomprehensiveness and lack of up-to-date data about the state of school education, especially the primary education, renders it difficult for the planners, policy and decision makers, in identifying appropriate measures and actions on how to improve the quality of education and make it more accessible to the people.

**Distribution of Sample**

As per the details presented in Table 4.1 and also in Fig 4.1 the total number of schools covered under the study was 399 under Post Enumeration Survey. Out of total sample (399 schools) 162 (40.6%) schools were selected from Primary schools, 118 (29.5%) schools from Primary with Upper Primary and 11 (2.7%) from primary with secondary or higher secondary sections, 108 (27%) from Upper primary with secondary or Higher secondary sections.

**Distribution of Sample by Location****Table No 4: Distribution of Schools by School Location**

Sl. No.	School Category	Rural / Urban		Total
		Rural	Urban	
1	Primary	132	30	162
2	Primary with Upper Primary	93	25	118
3	Primary with Secondary or Hr. Secondary	6	5	11
4	UP with Secondary or Hr. Secondary	84	24	108
	Total	315	84	399
	%	(78.9)	(21.1)	(100.0)

It is observed from the above Table 4.2 that 315 schools were located in rural areas while 84 schools were located in urban areas. Within rural area schools, majority of schools (132) were Primary schools and 93 primary with upper primary, 6 with Primary with Secondary and 84 from Upper Primary with Secondary.

**Distribution of Sample by Type of Schools**

The following table 5 furnishes the information of distribution of sample by type of schools.

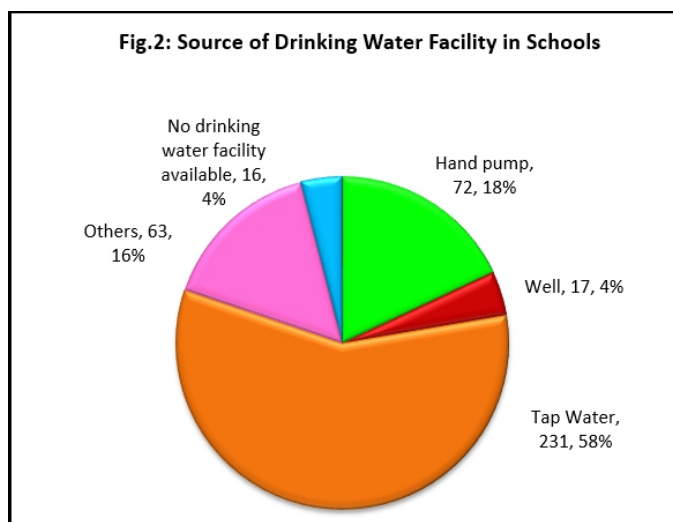
**Table 5 Distribution of Schools by Type of School**

Sl. No.	School Category	Type of School			Total
		Boys only	Girls only	Co-educational	
1	Primary	-	1	161	162
2	Primary with Upper Primary	2	10	106	118
3	Primary with Secondary or Hr. Secondary	3	8	-	11
4	UP with Secondary or Hr. Secondary	2	16	90	108
	Total	7	35	357	399
	%	(1.8)	(8.8)	(89.5)	(100.0)

It is evident from the Table 5 that out of 399 schools, 357 schools are co-education, followed by 35 are of exclusively girls and 7 for boys only. Out of these schools majority are Primary schools (162).

**Source of Drinking Water in Sample Schools**

The Fig 2 provide detailed information on Source of Drinking Water facility in the sample schools

**Functioning of Computers in Sample Schools****Table No. 6: Functioning of Computers in Sample Schools**

Sl. No.	School Category	No. of computers available in good working condition
1	Primary	54
2	Primary with Upper Primary	215
3	Primary with Secondary or Hr. Secondary	53
4	UP with Secondary or Hr. Secondary	537
	Total	859

The above table shows that in sample schools 859 computers are available in working condition in the sample schools. Out of this 537 in Upper Primary with secondary schools followed by 215 in Primary with upper primary schools, 54 are in primary, and 53 in primary with secondary schools.

**Facilities in Schools**

Detailed information on various facilities in schools is presented in Figure 3 Out of total 399 sample schools as many as 374 of them were Day schools. Similarly, only in 10 schools there was a shift system for functioning of the schools. However, in 351 schools Electricity facility is available. Separate toilet is available for boys in 248 schools followed by 361 schools are having separate toilet for girls. Further, in 206 schools playground facility is also available.

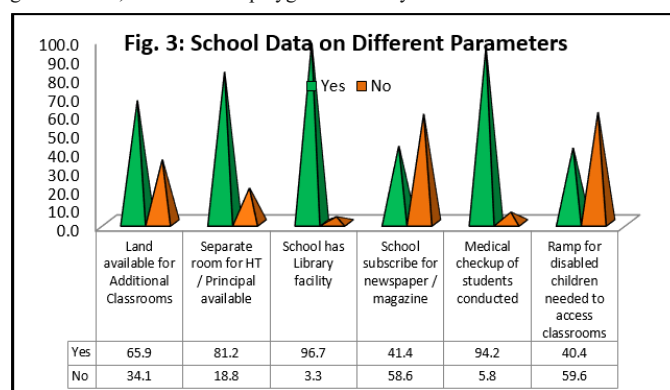
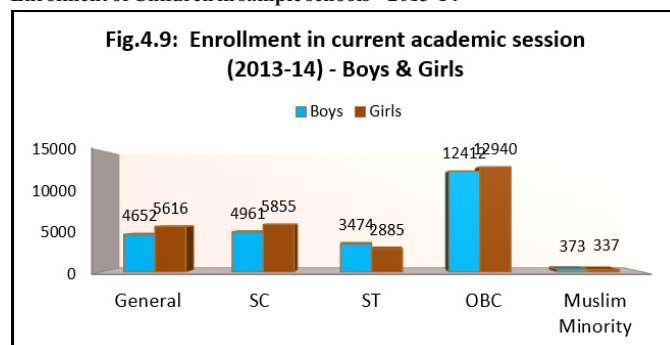


Fig 3 shows schools data on different parameters. Out of the 399 sample schools, 59.6% schools do not have a ramp for disabled children for access to class rooms, 5.8% schools do not have medical checkup conducted for students, 58.6% schools do not subscribe for newspaper/ magazine, only 3.3% schools do not have a library facility, 18.8% schools do not have a separate room for Head Teacher/Principal and 34.1% schools do not have a land available for additional classrooms.

**Enrolment of Children in sample schools – 2013-14**

The details of enrolment for the academic year 2013-14 were presented in Figure 4.9. It indicates that in the sample schools, the Girls enrolment is higher than the boys among General caste population followed by Scheduled caste population and OBC Community, whereas, Girls enrollment is less in Muslim Minority and Scheduled Tribe Communities in the samples schools.

**Comparative Data Analysis between PES and U-DISE Data:**

The purpose of the research paper is to establish the accuracy of Unified U-DISE survey in respect of various components of SSA in Andhra Pradesh. However, the Data Collection Formats (DCF) used for PES survey consists of additional information than the Data Collection Formats (DCF) through which data were collected for U-DISE survey. However, given the mandate of the study and the methodology followed, each and every category of schools was covered under PES survey. As a result, 399 schools were selected randomly for the study and survey was carried out through trained and qualified research investigators. The data of 399 schools were compared with PES data and conclusions were arrived. Further, as the PES data format has additional information than U-DISE survey data, the additional components were also presented separately and for the pur-



pose of comparison only common variables were taken up.

The comparative analysis of common variables existing between PES and U-DISE survey data among the common schools covered in this research paper is aimed at confirming the data collected through U-DISE survey the common variables where deviation were established is furnished below:

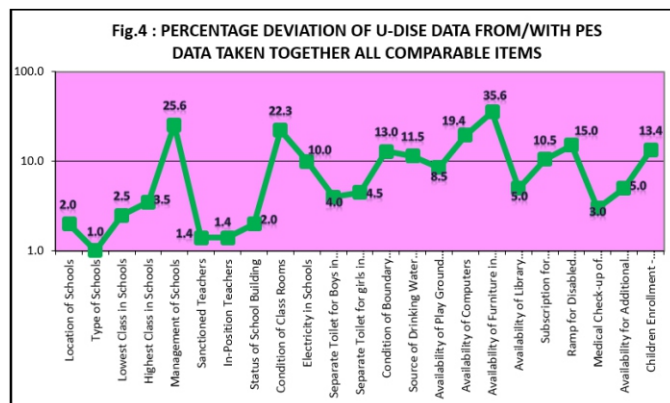
- Location of Schools;
- Type of Schools;
- Category of Schools;
- Lowest Class in Schools;
- Highest Class in Schools;
- Management of Schools;;
- Sanctioned Teachers;
- In Position Teachers;
- Status of School Building;
- Condition of Class Rooms;
- Electricity in Schools;
- Separate Toilets for Girls in Schools;
- Separate Toilets for Boys in Schools;
- Condition of Boundary Walls in Schools;
- Source of Drinking Water in Schools;
- Play Ground in Schools;
- Computers in Schools;
- Furniture in School; and
- Children's Enrolment in 2013-14.
- Library facilities in schools
- Subscription for newspaper/ Magazine
- Ramp for disabled children at schools
- Medical check-up of students conducted
- Land Availability & additional classrooms

For each component of comparable variables, as cited above, the analyzed data is presented against PES and U-DISE data actual and then deviation, if any, irrespective of positive or negative trends is presented. Wherever, possible and felt necessary, the analyzed data is also presented in graphical form for better understanding.

**TABLE NO. 7: Percentage Deviation and Precision Level of U-DISE Data with the PES Data for All Comparable Items**

Sl. No.	Description of Comparable items	Quantitative Value under			Percentage	
		U-DISE	PES	Deviation ignoring $\pm$ within Sub-items	Deviation	Precision
1	2	3	4	5	6	7
1	Location of Schools	399	399	8	2.0	98.0
2	Type of Schools	399	399	4	1.0	99.0
3	Category of Schools	399	399	-	-	-
4	Lowest Class in Schools	399	399	10	2.5	97.5
5	Highest Class in Schools	399	399	14	3.5	96.5
6	Management of Schools	399	399	102	25.6	74.4
7	Sanctioned Teachers	3301	3255	46	1.4	98.6
8	In-Position Teachers	2921	2886	41	1.4	98.6
9	Status of School Building	399	399	8	2.0	98.0
10	Condition of Class Rooms	2548	2530	568	22.3	77.7
11	Electricity in Schools	399	399	40	10.0	90.0
12	Separate Toilet for Boys in Schools	399	399	16	4.0	96.0
13	Separate Toilet for girls in Schools	399	399	18	4.5	95.5
14	Condition of Boundary Wall in Schools	399	399	52	13.0	87.0
15	Source of Drinking Water in Schools	399	399	46	11.5	88.5
16	Availability of Play Ground in Schools	399	399	34	8.5	91.5
17	Availability of Computers	954	859	185	19.4	80.6
18	Availability of Furniture in Schools	399	399	142	35.6	64.4

19	Availability of Library facility in Schools	399	399	20	5.0	95.0
20	Subscription for Newspaper / Magazine	399	399	42	10.5	89.5
21	Ramp for Disabled Children at Schools	399	399	60	15.0	85.0
22	Medical Check-up of Students conducted	399	399	12	3.0	97.0
23	Availability for Additional Classrooms	399	399	20	5.0	95.0
24	Children Enrollment - 2013-14	50728	53505	7181	13.4	86.6
	Total	68033	70616	8669	12.7	87.3



The above Table 7 and Fig.4 infers that the overall deviations of data from PES data within the comparable items are 12.7% and thereby giving a precision level of 87.3%. The highest deviation noticed with the following indicators.

- Enrolment of children (13.4%);
- School management (25.6%);
- Condition of class rooms, Minor & major repairs etc. (22.3%);
- Availability of electricity in schools (10.0%);
- Condition of boundary walls in schools (13.0%);
- Source of drinking water (11.5%);
- Ramp facility for children with special needs (15.0%);
- Availability of computers (19.4%);
- Subscription of Magazine/Newspapers (10.5%);

This is because of the respondents' inability to interpret the item and, under-reporting the items within accurate figures in U-DISE data. This demands the effective supervision and monitoring at different levels and proper awareness generation among the teachers, Head Masters and Principals to fill the schedules or Formats with accurate information through trainings. For this, it is necessary for them to maintain proper school records. Apart from this, it also requires attention of scrupulousness at cluster/ school complex level and Mandal level with full involvement of Mandal Educational Officers, Head Masters, Principals and Educational Department experts after giving proper orientation training on importance of U-DISE.

The overall deviation is 12.7%, which is slightly higher than the range of permissible limit i.e. 10%. As far as non-comparable items are concerned, due to non-availability of information of U-DISE, the following items were left out without comparison.

- Data on disability
- Working condition of the computers
- Data on class repetition and transition rate.

#### Conclusions:

- Overall deviations of data from PES data within the comparable items are 12.7% and thereby giving a precision level of 87.3%. The highest deviation of data is noticed in availability for furniture in school, management schools, and condition of the class room, availability computers, and ramp for disabled children at school & Children enrollment. This is because of the respondents in ability to interpret the item and under reporting the items with in accurate figures in U-DISE 2014 data. Within the available comparable data, few schools did not provide the information on some of the items.
- The highest deviation of data is observed in respect of items which are based on respondent's interpretation i.e. Condition of boundary wall, management of schools, and children enrollment.

- The items like type of schools, status of school buildings, availability of furniture in schools, teachers in position, disability, repetition rate, availability of additional class rooms were have not been reported properly. Hence, it was felt difficult to establish deviation on such an important variables.
  - As much as seven per cent of schools among 36% schools were not open at the time of survey causing lot of inconvenience while collecting data for these schools investigators visited second time.
  - It is noticed that 48% schools do not have electricity facility among the sample.
  - It is noticed that 40.4% schools do not have ramp facility for disabled children.
  - As much as 9.9% of Head Masters concerned could not able to provide requisite information pertaining to his/her school though records are available.
  - 8.5% of the schools even do not have photocopy of U-DISE format though instructions were given to the schools.
  - In as much as 33.6% of schools Display Boards were not available. Even in case of the schools where the display boards are available the information was not written on the boards.
  - Still considerable number of schools were not having exclusive toilets for girl children. Even in case of schools the toilets are available running water facility is not available.
  - Enrolment of girls is higher than that of the boys among the General (OC) , SC and OBC community where as girls enrollment is less in Muslim minority and Scheduled Tribes children in the sample schools.
7. The World Bank, 2001, Decentralization and Governance: Does decentralization improve public services delivery? The World Bank.
  8. Tung K.C 1999, The Role of Statistics in Policy Review, mid-production Workshop on Education for All 2000 Assessment and Sub-regional Meeting on National Education Statistical Information Systems (NESIS), Nyanga, Zimbabwe.
  9. UNESCO, 1998, Education Management Information system Training Package, principal Regional Office for Asia and the Pacific, Bangkok.

#### Recommendations:

Based on the results of the survey the following recommendations made for improvement.

- The emphasis should be laid on issues like enrolment, retention, and dropout in the data capture format resulting in effective enumeration of vital statistics.
- The field experience in this study reveals that the principals/ headmasters/ teachers feel that it is an additional burden to them and sometimes found it difficult in providing of the required data. Therefore, the principals/headmasters/teachers need to be given training on importance of data base and accurate filling of DCF.
- The school complex Head Masters, Principals of Junior colleges, Mandal Educational Officers, Officers of District project (SSA )and DIET faculty should be given training on collection and utilization of U-DISE data and it's all related software applications for proper planning and implementation of Educational activities at the district level.
- The investigators faced the problem in getting the data about previous academic year as the records are not maintained properly, therefore, the headmasters/ principals need to be advised to maintain a proper registers and records while supplying the information
- The schools have to mandatorily conduct community reading of draft U-DISE data before submitting the final copy to the block duly involving school management committees and parents.
- In Chittoor & East Godavari districts it is noticed that some of the schools are not covered in the U-DISE. Therefore instructions are to be given to all the DEO's and DPO's to collect the U-DISE data from all the eligible schools under U-DISE.
- MIS Units should be strengthened by appointing properly trained professionals to maintain and manage the information system at different levels.

#### REFERENCES:

1. Final Population Data: India Census of India 2011, Census of India Website.
2. Frank Land, 1999, Re-inventing Management Information Systems: MIS-beginnings, London School of Economics and Political Science, London.
3. Mehta, A. 2006, Elementary education in India-where do we stand. An analytical report, progress towards UEE. New Delhi: National University of Educational Planning and Administration (NUEPA).
4. Mehta, A. 2008, Elementary Education in India-where do we stand. An analytical report 2006-07; progress towards UEE. New Delhi: National University of Educational Planning and Administration (NUEPA).
5. Sarva Shiksha Abhiyan, 2002, A Programme for Universalization of Elementary Education. Ministry of Human Resource Development (MHRD). New Delhi.
6. SSA Policy Framework-MHRD, 2008, New Delhi.